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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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TITLE

REPORT OF PINE BEETLE SURVEYS

on the

YAKIMA INDIAN RESERVATION, WASHINGTON

SEASON OF 1945

By

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December 1, 1945

SUBJECT-

INDEX NO.-

U. S. Department of Agriculture
Bureau of Entomology and Plant Quarantine
Forest Insect Investigations

REPORT OF PINE BEETLE SURVEYS
on the
YAKIMA INDIAN RESERVATION, WASHINGTON
Season of 1945

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December 1, 1945

SUMMARY OF RESULTS

1944 LOSSES (Complete records)

Primary Insect: Western pine beetle in ponderosa pine

Estimated Gross Ponderosa Pine Mortality for 1944:

<u>No. of Trees</u>	<u>Volume (Board Feet)</u>	<u>Board Feet Per Acre</u>	<u>Percent of Stand</u>
20,000	18,000,000	50	0.5

Trend: Markedly higher than 1943

Classification: Normal infestation

1945 LOSSES (Incomplete records)

Primary Insect: Western pine beetle in ponderosa pine

Probable Trend: Only slightly higher than 1944, probably 4 percent higher.

Recommendations: Direct control not warranted but extension of sanitation-salvage operations advisable.

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The 1945 survey of forest insect conditions in the ponderosa pine stands of the Yakima Indian Reservation was made during the period of October 23-26, 1945. The field work was completed by a three-man crew composed of Mr. Stanley Johnson and Mr. Walter Head of the Indian Service and the writer. As in the past, a 100 percent cruise was made of six 320 acre check plots - one cutover and five virgin plots. All ponderosa pine trees killed or windthrown since the previous survey were marked and recorded.

Losses in 1944

At the end of last year's survey, it was evident that there would be a very definite upward trend in pine beetle losses in 1944 on portions of this reservation. As shown in Table 1, ponderosa pine mortality did increase sharply over that of the previous year. Five plots showed marked increases, while one plot (Trout Creek) showed a reduction in 1944 losses. On the five virgin plots, the 1944 mortality averaged 44 trees per section, 61 board feet per acre or 0.65 percent of the estimated stand volume. While these average losses are considered as representing a normal infestation they are 57 percent above the level of the 1943 losses. Once again the Logy Creek plot sustained the heaviest mortality, indicating that the remaining virgin stands in the Satus-Dry Creek Logging Unit are still suffering heavier losses than other portions of the reservation.

The estimated 1944 gross losses for the reservation as a whole have been placed at 20,000 trees and 18,000,000 board feet. It is felt that, for the most part, this loss had been offset by gross growth; however, this growth has been mainly in the younger age classes.

Tentative Losses for 1945

The 1945 survey was made at a time when approximately 78 percent of the probable losses for the year were evident. On this basis, the average losses for the five remaining virgin plots were only 4 percent higher than those of 1944. While these figures are tentative, they indicate that the 1945 losses will be higher on three plots and lower on two plots than they were in 1944.

Table 1. Results of the 1945 Survey on the Yakima Indian Reservation
Ponderosa pine timber killed by insects on 320-acre check plots.

Check Plots		1944 Losses								1945 Losses							
		Ponderosa Pine		Gross Volume BM				Marked in 1945				Estimated Total Losses					
Name and Location		MBM	No.	Per % of		Ratio		No. Volume		No. Volume		No. Volume		Per % of		Ratio	
	No.Acres	Volume	Trees	Total	Acres	Stand	to 1943	Date	Trees	BM	Trees	BM	Acres	Stand	to 1944		
Trout Creek																	
T7N, R13E, Sec. 17 W/2	4	320	1,900	12	7,970	25	.42	.50	10/24	18	7,240	20	9,000	28	.47	1.13	
So. Cedar Valley																	
T6N, R14E, Sec. 9 W/2	6	320	2,200	8	10,160	32	.46	4.03	10/25	13	11,790	17	15,000	47	.68	1.48	
Castile Crossing																	
T9N, R12E, Sec. 13 W/s	12	320	5,200	28	31,930	100	.61	1.52	10/23	30	33,050	40	40,000	125	.77	1.25	
Logy Creek																	
T7N, R16E, Sec. 10 W/2	14	320	3,000	53	39,490	123	1.32	2.16	10/24	35	24,400	45	35,000	109	1.17	.89	
Olney Corral																	
T10N, R14E, Sec. 27 W/2	16	300	2,500	9	6,640	22	.27	2.04	10/23	3	420	5	1,000	3	.04	.15	
TOTAL 5 PLOTS		1,570	14,800	110	96,190	61	.65	1.57		99	76,900	117	100,000	62	.65	1.04	
Cut-over Plot*																	
Smith Springs																	
T8N, R15E, Sec. 2 E/2	15	280	2,000	25	24,560	88	1.22	1.33	10.25	5	2,630	7	3,000	11	?	.12	

* This plot was cut late in 1944. The 1944 loss record is for a virgin condition while the 1945 losses are those occurring after cutting on a sanitation-salvage basis.

Although the Smith Springs plot was cut on a sanitation-salvage basis, it was cruised to determine the reduction in losses following this type of logging. A total of five trees killed in 1945 were found at the time of the survey; of these, one had been marked for logging but had been missed and four were of small diameter and not considered merchantable. The average diameter of the killed trees was 19 inches and they contained an average of 530 board feet. Considering all trees, the fact that the estimated losses on this plot indicate a reduction of 88 percent speaks well for the success of this method of logging as a means of reducing pine beetle losses in the logging unit.

Recommendations

Direct control measures are not warranted at this time and none are recommended. It is recommended that sanitation-salvage operations be extended to the remaining stands in the Satus-Dry Creek Logging Unit as soon as possible in order to utilize present values before they are too badly depleted by pine beetles. In this connection it would seem advisable to extend this method of cutting over as much of the reservation as possible in order to "bug-proof" the stands as soon as possible.